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REMARKS

Claims 1, 2-4, 10-11 and 23 remain in the application. Only Claims 1, 12 and 23 are in independent form. Reconsideration of the subject application as amended pursuant to and consistent with 37 C.F.R. §1.112 and in light of the remarks which follow are respectfully requested.

With the present response Applicants have corrected typographical errors found in the specification. Applicants enclose a set of modified pages of the description for the benefit of the Examiner.

Applicants have also corrected obvious errors found in the specification. The following clarifications are provided for the Examiner's benefit:

a) The error contained at page 4 line 24.

Point N°14 was referring to itself. This point thus obviously contains an error. Point 14 refers to a recombinant polypeptide. Point N°13 page 4 line 21 refers to a purified or isolated recombinant polypeptide comprising the amino acid sequence of secreted soluble $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunit polypeptide. By reading the specification it is obvious that point N°14 should refer to point N°13.

b) The error contained at page 20 line 26.

Page 20 line 26 relates to a polypeptide comprising an amino acid sequence having particular percentage of identity with cited amino acid sequences under which are SEQ ID N°4-6, SEQ ID N°10-12, SEQ ID N°16-17. However it refers to SEQ ID N°19 which is a DNA sequence corresponding to full length $\alpha_2\delta$ -2. This paragraph thus obviously contains an error. By reading the specification it is obvious that this paragraph should refer to SEQ ID N°18. This obvious correction is further demonstrated by the reading of page 20 line 34 of the specification which mentions SEQ ID N°4-6, SEQ ID N°10-12 and SEQ ID N°16-18 as being preferred amino acids sequences of the invention.

c) The error contained at page 31 line 20 and 25.

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Example 11 relates to a nucleotide sequence encoding a soluble secreted mouse $\alpha_2\delta$ -3 deletion mutant of cited amino acid sequence. However it refers to SEQ ID N°25 which is a DNA sequence. This example thus obviously contains an error. By reading the specification it is obvious that this paragraph should refer to SEQ ID N°24. This obvious correction is further demonstrated by the reading of page 33 line 9-10.

In the following paragraph, Applicants first provide a summary of some of the key points of the present invention. This is followed by comments to the specific rejections set forth in the Office Action.

The invention relates to truncated $\alpha_2\delta$ calcium channel subunit cDNA sequences which encode soluble secreted polypeptides which lack a C-terminal portion of the corresponding native protein while retaining their calcium channel subunit properties.

The term "soluble secreted $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunit" is intended to designate polypeptide sequences which, when produced by a recombinant host cell, are secreted at least partially into the culture medium rather than remaining associated with the host cell membrane (see the specification at page 8 lines 5-9).

Full length $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunits are membrane associated and thus are not secreted soluble. Therefore full length $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunits are not part of the invention.

Preferably the secreted soluble $\alpha_2\delta$ calcium channel subunit are human $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 polypeptides. However, due to cross species homology for the $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunit, the C-terminal deletion may also be applied to other eukaryotic species.

The present application specifically discloses the following deletion mutants:

For human $\alpha_2\delta$ -2:

- a 1062 amino acid long mutant (see nucleic sequence SEQ ID N°1 and amino acid sequence SEQ ID N°4)

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- a 1082 amino acid long mutant (see nucleic sequence SEQ ID N°2 and amino acid sequence SEQ ID N°5)
- a 1109 amino acid long mutant (see nucleic sequence SEQ ID N°3 and amino acid sequence SEQ ID N°6).

For human $\alpha_2\delta$ -3:

- a 1019 amino acid long mutant (see nucleic sequence SEQ ID N°7 and amino acid sequence SEQ ID N°10)
- a 1038 amino acid long mutant (see nucleic sequence SEQ ID N°8 and amino acid sequence SEQ ID N°11)
- a 1065 amino acid long mutant (see nucleic sequence SEQ ID N°9 and amino acid sequence SEQ ID N°12).

For human $\alpha_2\delta$ -4:

- a 304 amino acid long mutant (see nucleic sequence SEQ ID N°13 and amino acid sequence SEQ ID N°16)
- a 323 amino acid long mutant (see nucleic sequence SEQ ID N°14 and amino acid sequence SEQ ID N°17)
- a 350 amino acid long mutant (see nucleic sequence SEQ ID N°15 and amino acid sequence SEQ ID N°18).

The use of some of these mutants is further illustrated through the examples referring to SEQ ID N°23 which is a truncated $\alpha_2\delta$ -2 which corresponds to a 1109 amino acid long mutant to which a 6His tag has been added and the example relating to SEQ ID N°24 which is a $\alpha_2\delta$ -3 deletion mutant to which a 6His tag has been added.

Claims 1, 9 and 12 stand rejected under 35 U.S.C §112, first paragraph, because the specification, while enabling for nucleotides encoding SEQ ID NO: 20 and 22, does not reasonably provide enablement for a nucleic acid encoding any other polypeptide.

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The objection against Claim 9 can now be withdrawn since this claim has been deleted.

With regard to Claims 1 and 12, Applicants respectfully submit that these claims refer to secreted soluble polypeptides of $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 subunit. It is to be noted that SEQ ID NO: 20 and SEQ ID NO: 22 refer to full length sequences and do not fall into the scope of Claim 1.

Truncated $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 subunits have been illustrated by 3 specific sequences respectively. The one skilled in the art has enough guidance to create other deletion mutants which are secreted soluble $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunit polypeptides which retain their voltage-dependent calcium channel properties. Experimentation will be necessary to determine the interest of using shorter or longer mutants but the skilled person has an expectation of success based on the initial guidance of the specification and hence no undue experimentation is necessary.

In view of the above, withdrawal of the rejection of Claims 1, 9 and 12 under 35 USC §112, first paragraph is respectfully requested.

Claims 2-3 and 5 stand rejected under 35 U.S.C §112, first paragraph, because the specification while being enabling for a polynucleotide encoding a substantially purified polypeptide comprising an amino acid sequence set forth in SEQ ID NO: 20 and 22, does not reasonably provide enablement for a polynucleotide encoding a substantially purified variant having at least 90% amino acids sequence identity to SEQ ID NO 20 and 22. The specification does not enable any person skilled in the art to which it pertains or with which it is most nearly connected to make and use the invention commensurate in scope with these claims.

The objection against Claim 5 can now be withdrawn since this claim has been deleted.

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In response, Applicants wish to point out that Claims 2 and 3 have been amended to clarify the types of amino acids substitutions which can be contemplated by the skilled person.

Amended Claim 2 is supported by the specification at page 20, line 36 to the end of page 21.

Amended Claim 3 is supported by the specification at page 20, line 36 to the end of page 21.

In view of amended Claims 2 and 3, withdrawal of the rejection of those claims under 35 USC §112, first paragraph is respectfully requested.

Claims 1, 7, 9 and 12 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention.

The Examiner indicates that Claims 1, 9 and 12 are indefinite in that they only describe the peptide of interest by an arbitrary protein name, i.e., "alpha2delta-2" and that nothing in the claims distinctly identifies the protein.

The objection against Claim 9 can now be withdrawn since this claim has been deleted.

In response, Applicants wish to point out that protein names $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 are definite, per se, for one of ordinary skill in the art. As an example, Klugbauer et al. (The Journal of Neuroscience, January 15, 1999, 19(2): 684-691) describe two forms of the full length calcium channel $\alpha_2\delta$ -2 subunit and one form of the full length calcium channel $\alpha_2\delta$ -3 subunit. Thus, the wording $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 provide adequate guidance as to the nature of the polypeptide which Applicants claim.

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Furthermore, Applicants wish to point out that the $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 subunit polypeptides of the invention are defined as mammalian secreted soluble cerebral cortical voltage-dependent calcium channel subunit polypeptides. Thus Claims 1, 9 and 12 distinctly claim the subject matter of the invention.

In view of the above, withdrawal of the rejection of Claims 1, 9 and 12 under 35 USC §112, second paragraph, is respectfully requested.

The Examiner also indicates that Claims 7 and 9 are indefinite because they recite the term "stringent conditions" which is a conditional term and because some nucleic acids which might hybridize under conditions of moderate stringency for example would fail to hybridize under conditions of high stringency.

The objection against Claims 7 and 9 can now be withdrawn since these claims have been deleted.

Claims 1, 4 and 10-12 stand rejected under 35 USC §102(b). The Examiner explains that Wei et al. disclose a human α_2 calcium channel which is 100% identical to SEQ ID NO: 1.

In response Applicants provide herewith as Exhibit 1 a sequence alignment of the human α_2 calcium channel sequence disclosed in Wei et al. and SEQ ID NO: 1 disclosed in the present application.

This alignment shows that Wei et al. disclose a full length human $\alpha_2\delta$ -2 subunit polypeptide (5463 nucleotides (AF042792)) whereas SEQ ID NO: 1 of the present application is a truncated version of this full length polypeptide (3186 nucleotides). Thus the sequence of the α_2 calcium channel disclosed by Wei et al. is not the same sequence as sequence SEQ ID NO: 1. Therefore, the α_2 calcium channel disclosed by Wei et al. is not 100% identical to the sequence of SEQ ID NO: 1. Furthermore it is clear from this

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analysis that Wei et al. does not disclose any form of truncated calcium channel subunit. Hence Claims 1, 4, 10-12 are novel over this prior art.

The amendment of Claim 4 results from a typographical error. Appropriate sequences to be incorporated in this claim are provided at page 10, lines 16-19 of the specification as filed.

In view of the arguments set forth above withdrawal of the rejection of Claims 1, 4 and 10-12 under 35 USC §102(b) is respectfully requested.

Claims 1, 6, 7 and 9-12 are rejected under 35 USC §102(b) as being anticipated by WO9504822.

The objection against Claims 6, 7 and 9 can now be withdrawn since those claims have been deleted.

The Examiner explains that Harpold et al. disclose the cloning and expression of human voltage gated calcium channel subunits thus anticipating Claim 1.

In response, Applicants wish to draw the attention of the Examiner to the fact that Claim 1 refers to secreted soluble voltage-dependent calcium channel $\alpha_2\delta$ -2, $\alpha_2\delta$ -3, $\alpha_2\delta$ -4 subunit polypeptides and not only to voltage gated Ca^{2+} subunits. Therefore, Harpold et al. do not disclose a purified or isolated nucleic acid encoding a mammalian secreted soluble cerebral cortical voltage-dependent calcium channel $\alpha_2\delta$ -2, $\alpha_2\delta$ -3 or $\alpha_2\delta$ -4 subunit polypeptide of Claim 1.

In conclusion Claim 1 is not anticipated by Harpold et al.

In view of the arguments set forth above withdrawal of the rejection of Claims 1, 6, 7 and 9 under 35 USC §102(b) is respectfully requested.

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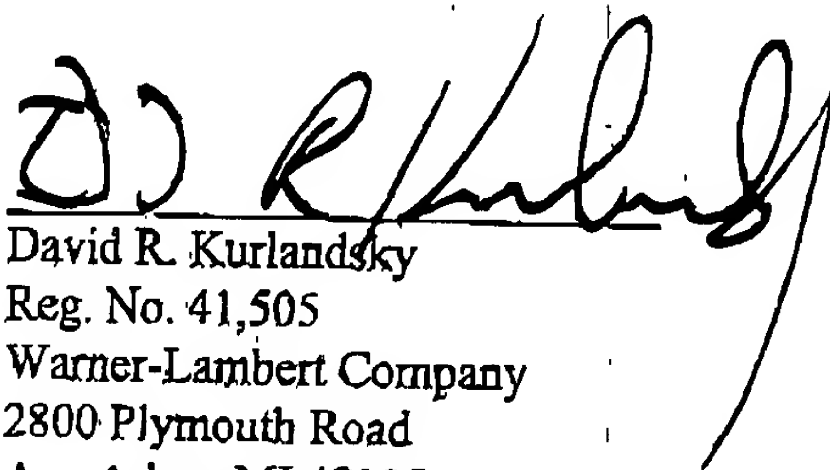
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In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

The Commissioner is hereby authorized to charge any fees under 37.C.F.R §1.116 and 1.117 that may be required by this paper to Deposit Account No. 23-0455,

In the event the Examiner wishes to discuss any matter concerning this application, he is invited to communicate with the undersigned.

Respectfully submitted,



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Attachment - Amended claims, Version with markings to show changes made
Exhibit 1

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"Version with markings to show changes made."

Please amend Claims 2, 3 and 4 as follows:

Claim 2 (amended). A purified or isolated nucleic acid according to claim 1, comprising a polynucleotide having at least 90% identity with the sequence encoding :

- from amino-acid 1 to between amino-acids 1027 and 1062 of SEQ ID N°20 for $\alpha_2\delta$ -2,
- from amino-acid 1 to between amino-acids 984 and 1019 of SEQ ID N°22 for $\alpha_2\delta$ -3

wherein the differing nucleotides encode amino acids which are the same as the amino acids of the SEQ ID N°20 and SEQ ID N°22 through codon degeneracy or encode amino acids which are equivalent to the amino acids of SEQ ID N°20 and SEQ ID N°22 either by structural homology, by net charge or hydrophobicity similarity, such that the encoded polypeptide retains its specificity and affinity properties to the biological targets of the parent polypeptides.

Claim 3 (amended). A purified or isolated nucleic acid according to claim 1, having at least 90% identity with the sequence encoding :

- from amino-acid 1 to between amino-acids 1047 and 1062 of SEQ ID N°20 for $\alpha_2\delta$ -2,
- from amino-acid 1 to between amino-acids 1004 and 1019 of SEQ ID N°22 for $\alpha_2\delta$ -3

wherein the differing nucleotides encode amino acids which are the same as the amino acids of the SEQ ID N°20 and SEQ ID N°22 through codon degeneracy or encode amino acids which are equivalent to the amino acids of SEQ ID N°20 and SEQ ID N°22 either by structural homology, by net charge or hydrophobicity similarity, such that the encoded polypeptide retains its specificity and affinity properties to the biological targets of the parent polypeptides.

Claim 4 (amended). A purified or isolated nucleotide sequence according to claim 1 wherein said sequence is the sequence of SEQ ID N°1, SEQ ID N°2, SEQ ID N°3, SEQ ID N°7, SEQ ID N°8, SEQ ID N°9, SEQ ID N°13, SEQ ID N°14, or SEQ ID N°15[, SEQ ID N°19 or SEQ ID N°21].

Please delete Claims 5, 6, 7 and 9.

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Please add new Claim 23.

Claim 23 (NEW). A purified or isolated nucleic acid having at least 90% identity with the nucleotide sequence of SEQ ID N°1, SEQ ID N°2, SEQ ID N°3, SEQ ID N°7, SEQ ID N°8, SEQ ID N°9, SEQ ID N°13, SEQ ID N°14, or SEQ ID N°15.

Exhibit 1
Sequence alignment of sequence SEQ ID N°1 of the patent
application and the sequence of the human alpha 2 calcium channel
disclosed by Wei et al. (AF042792)

```
SEQ_ID_N1.se
AF042792.seq
GCCAGCGCTGC
10

SEQ_ID_N1.se
AF042792.seq AGGGAGATAGCAGCGCGTAGCCCGCAGAGGCGCTGCGGCCCGTGCAGCCCCGAGGCCCC
20 30 40 50 60 70

SEQ_ID_N1.se
AF042792.seq TCGCGGAGAAGGCGGCGCGGAGGAGAGGCCGAGTTACCGCCCGCGCCCGCGCCCCCCC
80 90 100 110 120 130

SEQ_ID_N1.se
AF042792.seq TCCCCGCGGCGCCGCATCTTGAATGGAACATGGCGGTGCGCGCTCGGACCTGCGGCGCC
140 150 160 170 180 190

SEQ_ID_N1.se
AF042792.seq TCTCGGCCCGGCCAGCGCGGACTGCGCGCCCTGGCCCGGCTGCGGCCCCACCCCTGGC
40 50 60 70 80 90

SEQ_ID_N1.se
AF042792.seq TCTCGGCCCGGCCAGCGCGGACTGCGCGCCCTGGCCCGGCTGCGGCCCCACCCCTGGC
200 210 220 230 240 250

SEQ_ID_N1.se
AF042792.seq CCGGCGACCCCGGCGCCCGACGTCGCGGCCCGCCCGCTGTGGCTGCTGCTGCGCGCTT
100 110 120 130 140 150

SEQ_ID_N1.se
AF042792.seq CCGGCGACCCCGGCGCCCGACGTCGCGGCCCGCCCGCTGTGGCTGCTGCTGCGCGCTT
260 270 280 290 300 310

SEQ_ID_N1.se
AF042792.seq CTACCGCTGCTGCGCGCCCGGCGCCCTCTGCCTACAGCTTCCCCCAGCAGCACACGATG
160 170 180 190 200 210

SEQ_ID_N1.se
AF042792.seq CTACCGCTGCTGCGCGCCCGGCGCCCTCTGCCTACAGCTTCCCCCAGCAGCACACGATG
320 330 340 350 360 370

SEQ_ID_N1.se
AF042792.seq CAGCACTGGGCCCCGCGTCTGGAGCAGGAGGTCGACGCGTGATGCGGATTTTGGAGGC
220 230 240 250 260 270

SEQ_ID_N1.se
AF042792.seq CAGCACTGGGCCCCGCGTCTGGAGCAGGAGGTCGACGCGTGATGCGGATTTTGGAGGC
380 390 400 410 420 430

SEQ_ID_N1.se
AF042792.seq G'CCAGCAGCTCCGTGAGATTTACAAGGACAACCGGAACCTGTTGAGGTACAGGAGAAT
280 290 300 310 320 330

SEQ_ID_N1.se
AF042792.seq G'CCAGCAGCTCCGTGAGATTTACAAGGACAACCGGAACCTGTTGAGGTACAGGAGAAT
440 450 460 470 480 490

SEQ_ID_N1.se
AF042792.seq GAGCCTCAGAAAGTTGGTGAGAAAGGTGGCAGGGGACATTGAGAGCCTTCTGGACAGGAAG
340 350 360 370 380 390

SEQ_ID_N1.se
AF042792.seq GAGCCTCAGAAAGTTGGTGAGAAAGGTGGCAGGGGACATTGAGAGCCTTCTGGACAGGAAG
500 510 520 530 540 550

SEQ_ID_N1.se
AF042792.seq GTGCAGGCCCTGAAGAGACTGGCTGATGCTGCAGAGAACTTCCAGAAAGCACACCGCTGG
400 410 420 430 440 450
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560      570      580      590      600      610
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AF042792.seq 460      470      480      490      500      510
CAGGACAACATCAAGGAGGAAGACATCGTGCTACTATGACGCCAAGGCTGACGCTGAGCTG
620      630      640      650      660      670
SEQ_ID_N1.se 520      530      540      550      560      570
GACGACCCCTGAGAGTGAGGATGTGGAAGGGGGTCTAAGGCCAGCACCCCTAAGGCTGGAC
AF042792.seq 520      530      540      550      560      570
GACGACCCCTGAGAGTGAGGATGTGGAAGGGGGTCTAAGGCCAGCACCCCTAAGGCTGGAC
680      690      700      710      720      730
SEQ_ID_N1.se 580      590      600      610      620      630
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AF042792.seq 580      590      600      610      620      630
TTCATCGAGGACCCAACTTCAAGAACAGGTCAACTATTTCATACGCGGCTGTACAGATC
740      750      760      770      780      790
SEQ_ID_N1.se 640      650      660      670      680      690
CCTACGGACATCTACAAAGGCTCCACTGTCTCATCTCAATGAGCTCAACTGGACAGAGGCC
AF042792.seq 640      650      660      670      680      690
CCTACGGACATCTACAAAGGCTCCACTGTCTCATCTCAATGAGCTCAACTGGACAGAGGCC
800      810      820      830      840      850
SEQ_ID_N1.se 700      710      720      730      740      750
CTGGAGAATGTGTTTCATGGAAAACCGCAGACAAGACCCCACTGCTGTGGCAGGTCTTC
AF042792.seq 700      710      720      730      740      750
CTGGAGAATGTGTTTCATGGAAAACCGCAGACAAGACCCCACTGCTGTGGCAGGTCTTC
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920      930      940      950      960      970
SEQ_ID_N1.se 820      830      840      850      860      870
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ATCGACCTGTACGATGTCCGAAGGAGACCCCTGGTATATCCAGGGGGCCCTGTCACCCAAA
980      990      1000      1010      1020      1030
SEQ_ID_N1.se 880      890      900      910      920      930
GACATGGTTCATCATCGTGGATGTGAGTGGCAGTGTGAGCGGCTGACCCCTGAAGCTGATG
AF042792.seq 880      890      900      910      920      930
GACATGGTTCATCATCGTGGATGTGAGTGGCAGTGTGAGCGGCTGACCCCTGAAGCTGATG
1040      1050      1060      1070      1080      1090
SEQ_ID_N1.se 940      950      960      970      980      990
AAGACATCTGTCTGCGAGATGCTGGACACGCTGTCTGATGACTATGTGAATGTGGCC
AF042792.seq 940      950      960      970      980      990
AAGACATCTGTCTGCGAGATGCTGGACACGCTGTCTGATGACTATGTGAATGTGGCC
1100      1110      1120      1130      1140      1150
SEQ_ID_N1.se 1000      1010      1020      1030      1040      1050
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AF042792.seq 1000      1010      1020      1030      1040      1050
TCGTTCAACGAGAAGGCACAGCCTGTGTCTATGCTTCACACACCTGGTGCAGGCCAATGTG
1160      1170      1180      1190      1200      1210
SEQ_ID_N1.se 1060      1070      1080      1090      1100      1110
CGCAACAAGAAGGTGTTCAAGGAAGCTGTGCAGGGCATGGTGGCCAAGGGCACCACAGGC
AF042792.seq 1060      1070      1080      1090      1100      1110
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1220      1230      1240      1250      1260      1270
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1240 1250 1260 1270 1280 1290
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1400 1410 1420 1430 1440 1450
1300 1310 1320 1330 1340 1350
SEQ_ID_N1.se CATAACTATGACGTCACACCGCTGCAGTGGATGGCCTGTGCCAACAAGGCTACTATTTT
AF042792.seq CATAACTATGACGTCACACCGCTGCAGTGGATGGCCTGTGCCAACAAGGCTACTATTTT
1460 1470 1480 1490 1500 1510
1360 1370 1380 1390 1400 1410
SEQ_ID_N1.se GAGATCCCTTCCATCGGAGCCATCCGCATCAACACACAGGAATATCTAGATGTGTGGGC
AF042792.seq GAGATCCCTTCCATCGGAGCCATCCGCATCAACACACAGGAATATCTAGATGTGTGGGC
1520 1530 1540 1550 1560 1570
1420 1430 1440 1450 1460 1470
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1580 1590 1600 1610 1620 1630
1480 1490 1500 1510 1520 1530
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AF042792.seq GATGCACTGGGACTGGGGTTGGTGGTAACAGGGACCCCTCCCTGTTTCAACCTGACACAG
1640 1650 1660 1670 1680 1690
1540 1550 1560 1570 1580 1590
SEQ_ID_N1.se CATGGCCCTGGGGAAAAGAAGAACCAAGCTGATCCTGGGCGTGATGGGCATTGACGTGGCT
AF042792.seq CATGGCCCTGGGGAAAAGAAGAACCAAGCTGATCCTGGGCGTGATGGGCATTGACGTGGCT
1700 1710 1720 1730 1740 1750
1600 1610 1620 1630 1640 1650
SEQ_ID_N1.se CTGAATGACATCAAGAGGCTGACCCCCAAGTACACGCTTGGAGCCAACCGCTATGTGTTT
AF042792.seq CTGAATGACATCAAGAGGCTGACCCCCAAGTACACGCTTGGAGCCAACCGCTATGTGTTT
1760 1770 1780 1790 1800 1810
1660 1670 1680 1690 1700 1710
SEQ_ID_N1.se GCATTGACCTGAACGGCTACGTGTTGCTGCACCCCAATCTCAAGCCCCAGACCACCAAC
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1820 1830 1840 1850 1860 1870
1720 1730 1740 1750 1760 1770
SEQ_ID_N1.se TCCGGGAGCCTGTGACTCTGGACTTCCTGGATGCGGAGCTAGAGGATGAGAACAGGAA
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1880 1890 1900 1910 1920 1930
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AF042792.seq GAGATCCGTCGGAGCATGATTGATGGCAACAAGGGCCACAAGCAGATCAGAACGTTGGTC
      1940      1950      1960      1970      1980      1990

      1840      1850      1860      1870      1880      1890
SEQ_ID_N1.se AAGTCCCTGGATGAGAGGTACATAGATGAGGTGACACGGAACTACACCTGGGTGCCTATA
AF042792.seq AAGTCCCTGGATGAGAGGTACATAGATGAGGTGACACGGAACTACACCTGGGTGCCTATA
      2000      2010      2020      2030      2040      2050

      1900      1910      1920      1930      1940      1950
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AF042792.seq AGGAGCACTAACTACAGCCTGGGGCTGGTGCTCCACCCCTACAGCACCTTCTACCTCCAA
      2060      2070      2080      2090      2100      2110

      1960      1970      1980      1990      2000      2010
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AF042792.seq GCCAATCTCAGTGACCAGATCCTGCAGGTCAAGTATTTTGAGTTCCTGCTCCCCAGCAGC
      2120      2130      2140      2150      2160      2170

      2020      2030      2040      2050      2060      2070
SEQ_ID_N1.se TTTGAGTCTGAAGGACACGTTTTTCATTGCTCCCAGAGAGTACTGCAAGGACCTGAATGCC
AF042792.seq TTTGAGTCTGAAGGACACGTTTTTCATTGCTCCCAGAGAGTACTGCAAGGACCTGAATGCC
      2180      2190      2200      2210      2220      2230

      2080      2090      2100      2110      2120      2130
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      2240      2250      2260      2270      2280      2290

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      2200      2210      2220      2230      2240      2250
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      2380      2390      2400      2410      2420      2430
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